

### **REMARKS**

These remarks and the accompanying amendments are responsive to the Office Action mailed September 9, 2005 (hereinafter referred to as the "Office Action") having a shortened statutory period for response that expired December 9, 2005. A petition and fee for a one month extension of time accompanies this response thereby extending the period for response until January 9, 2006. At the time of the last examination, Claims 1-15 were pending. By this response, Claims 2, 6, 12, 13 and 15 are cancelled and no claims are added. Accordingly, Claims 1, 3-5, 7-11 and 14 remain pending for further reconsideration. All of these claims except Claims 9 and 10 are currently amended herein.

Section 1 of the Office Action objected to Claim 6. Claim 6 is cancelled by this amendment. Thus, this objection is rendered moot.

Section 2 of the Office Action rejects Claims 1-13 under 35 U.S.C. 112, second paragraph, as being indefinite. The Office Action only gives reasoning for rejecting 1, 2, 7 and 11-13. Thus, it is assumed that once the indefiniteness rejection is overcome with respect to Claims 1, 2, 7 and 11-13, that the entire indefiniteness rejection is also overcome. Clarification is respectfully requested if this is not the case. The indefiniteness rejection is moot with respect to cancelled Claims 2, 12 and 13, but remains with respect to Claims 1, 7 and 11. The Applicants respectfully traverse this rejection as applied to Claims 1 and 11 for the following reasons.

The Office Action asserts that in claims 1 and 11, there are multiple prior references of "frame data", and there is insufficient antecedent basis for this limitation. However, upon further inspection of these claims, the applicants have found no problems in Claims 1 and 11. For example, Claim 1 considers two cases. In the case where the frame contains the transmission

data, "the generated frame data" (page 55, line 17) is "frame data containing the transmission data and the calculated error-detecting code of the transmission data" (page 55, lines 10-12), and in the case where the frame does not contain the transmission data, "the generated frame data" (page 55, line 17) is "frame data that contains neither the transmission data nor the error-detecting code of the transmission data" (page 55, lines 13-15). Therefore, claim 1 is not indefinite. For similar reasons, Claim 11 is not indefinite.

The Office Action further asserts that in claim 7, there are multiple prior references of "channels". The Claim 7 expression "the step of calculating the error-detecting code calculates the error-detecting code of the transmission data for each channel in the first channel group only if the frame contains the transmission data for the channel" is herein amended to read "the step of calculating the error-detecting code calculates, for each channel in the first channel group, the error-detecting code of the transmission data only if the frame contains the transmission data for that channel".

Here, "that channel" at the last part means "each channel in the first channel group". For example, consider a case where the first channel group includes channels 1 and 2, and the frame contains transmission data for the channel 1, but the frame does not contain transmission data for the channel 2. In this case, the error-detecting code of the transmission data is calculated for the channel 1, but the error-detecting code of the transmission data is not calculated for the channel 2. In light of the amendments to Claim 7, the applicants respectfully submit that Claim 7 is now not indefinite.

Therefore, withdrawal of the 35 U.S.C. 112, second paragraph rejection is respectfully requested.

Section 5 of the Office Action rejects Claims 1, 4/1, 5/1, 11, 13 and 14 under 35 U.S.C. 102(b) as being anticipated by United States patent number 5,896,374 issued to Okumura (hereinafter referred to as "Okumura-US"). This rejection is moot with respect to Claim 13. Furthermore, Claims 4 and 5 are herein amended to be exclusively dependent upon Claim 1. The rejection thus remains with respect to Claims 1, 4, 5, 11 and 14. Of these claims, Claims 1, 11 and 14 are independent claims.

As recited in Claims 1, a length of the transmission data placed in each frame is one of two values,  $X$  ( $X \neq 0$ ) and 0. At the transmitting side, in each frame, the data transmission method calculates an error-detecting code of the transmission data and generates frame data containing the transmission data and the calculated error-detecting code, if the frame contains the transmission data (if the length is  $X$ ), while it generates frame data that contains neither the transmission data nor the error-detecting code, if the frame does not contain the transmission data (if the length is 0).

At the receiving side, in each frame, the data transmission method of claim 1 determines the transmission data and the error-detecting code based on the final bit position where the length of the transmission data is  $X$ , and calculates the error-detecting code based on the determined transmission data. Then, it decides that the frame contains the transmission data (the length is  $X$ ), if the determined error-detecting code matches the error-detecting code calculated based on the determined transmission data, and decides that the frame data does not contain the transmission data (the length is 0) or the received frame data contains an error if the determined error-detecting code does not match the calculated error-detecting code.

In this way, if it is known that the length of transmission data is one of two values,  $X$  ( $X \neq 0$ ) and 0, then the process on the receiving side can be simplified. That is, it is not required

that every final bit positions be successively assumed in each frame. Instead, it only has to check whether the error-detecting codes match at the final bit position where the length of the transmission data is X (see page 35, line 22 to page 36, line 9 of the specification).

These recited features of Claim 1 are not disclosed in Okumura-US. That is, Okumura-US does not disclose that when it is known that the length of transmission data is one of two values, X ( $X \neq 0$ ) and 0, frame data containing the transmission data and the error-detecting code is generated, if the frame contains the transmission data (if the length is X), while frame data that contains neither the transmission data nor the error-detecting code is generated, if the frame does not contain the transmission data (if the length is 0).

Further, Okumura-US does not disclose that in each frame, it is decided that the frame contains the transmission data (the length is X), if the determined error-detecting code matches the error-detecting code calculated based on the determined transmission data, and it is decided that the frame data does not contain the transmission data (the length is 0) or the received frame data contains an error if the determined error-detecting code does not match the calculated error-detecting code.

Therefore, Claim 1 is not anticipated by nor rendered unpatentable over Okumura-US. Claims 11 and 14 are similar to Claim 1, except that they recited these features from the perspective of a data transmission system and a receiver. As mentioned above, there are a number of features that are not described, taught or suggested by Okumura-US with respect to either the transmission side or the receiver side. Accordingly, Claims 11 and 14 are likewise not anticipated by nor rendered unpatentable over Okumura-US. Claims 4 and 5 depend from Claim 1, and are thus not anticipated by nor rendered unpatentable over Okumura-US for at least the reasons provided for Claim 1.

Therefore, the 35 U.S.C. 102(b) rejection should be withdrawn.

Section 6 of the Office Action rejected Claims 2, 3/2, 4/2, 5/2, 12 and 15 under 35 U.S.C. 102(a) as being anticipated by European Patent publication EP1107499A1 by Okumura (hereinafter referred to as "Okumura-EP"). Claims 2, 12 and 15 are cancelled herein. Furthermore, Claims 3, 4 and 5 are amended to depend only from Claim 1. Thus, this rejection is moot. Nevertheless, as Section 8 also used Okumura-EP to reject Claim 3/1 under 35 U.S.C. 103(a), the prior art status of Okumura-EP will now be challenged as follows.

If a reference qualifies as prior art under any one of 35 U.S.C. sections 102(a) through (g), that reference may be used in the 35 U.S.C. 103(a) rejection.

As for 35 U.S.C. 102(b), Okumura-EP clearly does not qualify as prior art since Okumura-EP was published on June 13, 2001 and its international publication was published on December 28, 2000 which is within one year from the application date (November 16, 2001) of the present application. Further, Okumura-EP does not qualify as prior art under 35 U.S.C. 102(c)-(g) either. This leaves only 35 U.S.C. 102(a) for further consideration.

Accompanying this response is a "Declaration of Inventor Yukihiro Okumura" providing evidence that the content of Okumura-EP represents the sole work of the sole-inventor of the present application. Accordingly, Okumura-EP is not "by another" as required under 35 U.S.C. 102(a) (also referring to the Manual of Patent Examining Procedure section 2132.01). Thus, Okumura-EP does not qualify as prior art for the present application.

Therefore, since Okumura-EP is removed as prior art, the claim amendments made herein are not for purposes of overcoming the 35 U.S.C. 102(a) rejection. Furthermore, the rejection of Claim 3 under 35 U.S.C. 103(a) as being unpatentable over Okumura-US in view of Okumura-EP should likewise be withdrawn due at least to the disqualification of Okumura-EP as prior art.

Section 9 of the Office Action rejects Claim 5 under 35 U.S.C. 103(a) as being unpatentable over Okumura-US. As explained above, however, Okumura-US fails to teach or suggest a large number of the features recited in Claim 1, from which Claim 5 depends. Furthermore, Claim 1 is not rendered unpatentable over Okumura-US. Therefore, Claim 5 is not unpatentable under 35 U.S.C. 103(a) in view of Okumura-US for at least the reasons provided above with respect to Claim 1. Therefore, the 35 U.S.C. 103(a) rejection of Claim 3 should be withdrawn.

In the event that the Examiner finds remaining impediment to a prompt allowance of this application that may be clarified through a telephone interview, the Examiner is requested to contact the undersigned attorney.

Dated this 4<sup>th</sup> day of January, 2006.

Respectfully submitted,



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